# Power Supply IOC Records

| Suffix | Full Name | Type | Scope | Description |
|---|---|---|---|---|
| **BufAvl** | Buffer Available | bi | PUBLIC | Single-bit indicates which last received buffer is available.<br>0 => Buffer 'B'  1 => Buffer 'A' |
| **CBstLN** | Burst Length | longout | PUBLIC | Sets number of samples that will be captured in Burst Mode. Data type is a 32-bit unsigned integerwith a range of 1 to 5458, |
| **CBstRt** | Burst Rate | mbbo | PUBLIC | Sets Burst Mode sample rate. Data type is an unsigned integer that selects the sample rate from the following values:<br>1 => 10 KHz<br>2 =>  5 KHz<br>3 => 2.5 KHz<br>4 => 1 KHz<br>5 => 720 Hz<br>6 => 250 Hz<br>7 => 100 Hz |
| **CClr** | Clear Faults | bo | PUBLIC | Single-bit clears latched PSC fault bits when written. NOTE that writing any value to this record will clear the fault bits. |
| **CCmd** | Command Register | mbbo | PUBLIC | Send command to PSI. The following integer values written to the VAL field will send commands:<br>0x1 => Switch to OFF mode<br>0x2 => Switch to ON mode<br>0x4 => Switch to STANDBY mode<br>0x8 => RESET<br>0x80000 => Start PSI recalibrate function |
| **CDF** | Current Difference | calc | PUBLIC | Difference between the current setpoint value being sent to the power supply and the current readback value. |
| **CECh** | Enable Channel | bo | PUBLIC | Enable and disable serial communication channel link to PSI.<br>0 => DISABLE<br>1 => ENABLE |
| **CISet** | Current Setpoint | ao | PUBLIC | Controls power supply current setpoint. The VAL field contains the setpoint value in floating point form, scaled according to the power supply current range. When the VAL field is written by a client application, the new value is converted to a raw count value, and sent to the PSI. |

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| **CmdAvl** | Command Available | bi | PUBLIC | {TBD} |
| **COpMD** | Operating Mode Selec | mbbo | PUBLIC | Selects PSC data collection operating mode. The VAL field contains an integer which selects the operating mode. A new operating mode is selected when the VAL field is written by the client application. Valid values are<br>1 => STOP<br>2 => CONTINUOUS<br>3 => BURST |
| **CRCErr** | CRC Error | bi | PUBLIC | Single status bit signals CRC error in the serial communication link between the PSC and the PSI.<br>0 => NO ERROR<br>1 => ERROR |
| **CrLos** | Carrier Lost | bi | PUBLIC | Single-bit signals that the PSC-to-PSI serial communication link carrier has been lost.<br>0 => CARRIER OK<br>1 => CARRIER LOST |
| **CSetTc** | Reset Timer Counter | bo | PUBLIC | Single-bit resets PSC time counter. Writing any value to the VAL field will reset the time counter. |
| **CSFN** | Save File Name | stringout | PUBLIC | Contains name of file where sample data will be saved. The name will have a default value |
| **CTILim** | Tolerance Setpoint | ao | PUBLIC | Defines the maximum allowable difference between the current readback and the current setpoint. If the difference exceeds the Tolerance Setpoint the TIErr (Current Tolerance Error) bit will be set. The VAL field contains the difference value in floating point form, scaled according to the power supply current range. |
| **Err** | Fault Flag | calc | PUBLIC | Single-bit summarizes all fault and error conditions. These include all power supply hardware fault status bits and PSC/PSI hardware and software status bits.<br>0 => OK<br>1 => ERROR |

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| **FanFlt** | Fan Fault | bi | PUBLIC | Single-bit ndicates that a power supply FAN FAULT exists with loss of air flow in the power supply. This monitors the FAN FAULT bit from the power supply.<br>0 => NO FAULT<br>1 => FAULT |
| **FltS** | Fault Summary | bi | PUBLIC | Single-bit indicates that an internal hardware fault has shut down the power supply. This monitors the FAULT SUMMARY bit from the power supply.<br>0 => OK<br>1 => FAULT EXISTS |
| **GndFlt** | Ground Fault | bi | PUBLIC | Single-bit indicates that a GROUND FAULT exists because of unwanted current leakage to ground. This monitors the GROUND FAULT bit from the power supply.<br>0 => OK<br>1 => FAULT EXISTS |
| **H2OFlw** | Loss of Water Flow | bi | PUBLIC | Single-bit indicates that an WATER FLOW fault exists because of loss of water flow in power supply. This monitors the WATER FLOW bit from the power supply.<br>0 => OK<br>1 => FAULT EXISTS |
| **H2OMat** | Water on Mat | bi | PUBLIC | Single-bit indicates that an WATER MAT fault exists because of presence of water on the water mat. This monitors the WATER MAT bit from the power supply.<br>0 => OK<br>1 => FAULT EXISTS |
| **I** | Current Readback | ai | PUBLIC | Most recent measured current readback value. |
| **IErr** | Current Error Readbac | ai | PUBLIC | Most recent current error readback value. This value is equal to the difference between the Current Setpoint Readback and the Current Readback values multiplied by 50. |
| **IErrWF** | Current Error Readbac | waveform | PUBLIC | Measured current error readback from memory. |
| **ISet** | Current Setpoint Read | ai | PUBLIC | Most recent setpoint readback. Value. |
| **ISetWF** | Setpoint Readback W | waveform | PUBLIC | Setpoint readback from memory. |

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| **IWF** | Current Readback Wa | waveform | PUBLIC | Measured current readback from memory. |
| **MFul** | Memory Full | bi | PUBLIC | Single-bit indicates that the PSC memory is full.<br>0 => NOT FULL<br>1 = > FULL |
| **MStop** | Memory Stopped | bi | PUBLIC | Single-bit indicates status of data collection to memory.<br>0 => ACTIVE<br>1 => STOPPED |
| **Neg** | Power Supply Negativ | bi | PUBLIC | Single-bit status indicates the power supply polarity, as determined by the NEGATIVE status bit from the power supply.<br>0 => POSITIVE<br>1 => NEGATIVE |
| **Off** | Power Supply OFF St | bi | PUBLIC | Single-bit status indicates that the power supply is in the OFF state. This monitors the OFF bit from the power supply.<br>0 => NOT OFF<br>1 => OFF |
| **OI** | Overcurrent | bi | PUBLIC | Single-bit indicates that an OVERCURRENT fault exists. This monitors the OVERCURRENT readback from the power supply.<br>0 => OK<br>1 => OVERCURRENT |
| **On** | Power Supply ON Stat | bi | PUBLIC | Single-bit status indicates that the power supply is in the ON state. This monitors the ON bit from the power supply.<br>0 => NOT ON<br>1 => ON |
| **OReg** | Out of Regulation | bi | PUBLIC | Single-bit Indicates that an OUT OF REGULATION fault exists. This monitors the OUT OF REGULATION status readback from the power supply.<br>0 => OK<br>1 => OUT OF REGULATION |
| **OT** | Over Temperature | bi | PUBLIC | Single-bit ndicates that an OVERTEMPERATURE fault exists. This monitors the OVERTEMP status readback from the power supply.<br>0 => OK<br>1 => OVER TEMPERATURE |

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| **OV** | Overvoltage | bi | PUBLIC | Single-bit indicates that an OVERVOLTAGE fault exists. This monitors the OVERVOLTAGE status readback from the power supply.<br>0 => OK<br>1 => OVERVOLTAGE |
| **PhFlt** | Phase Fault | bi | PUBLIC | Single-bit indicates that a PHASE FAULT exists. This monitors the PHASE FAULT status readback from the power supply.<br>0 => OK<br>1 => PHASE FAULT |
| **PoModX** | Polar Mode | bo | PUBLIC | Single-bit sets polarity mode for power supply. |
| **RpFlt** | Ripple Fault | bi | PUBLIC | Single-bit indicates that a RIPPLE FAULT exists. This monitors the RIPPLE FAULT status readback from the power supply.<br>0 => OK<br>1 => RIPPLE FAULT |
| **RStat** | PSI Status Readback | mbbiDirect | PRIVATE | Power supply hardware status bits corresponding to the sixteen PSI binary status input lines. |
| **Rstat1** | PSC Status Readback | mbbiDirect | PRIVATE | Status bits generated internally by the PSC. |
| **RstaWF** | Status Waveform | waveform | PUBLIC | Status from memory. |
| **RTimG** | Global Timer | longin | PUBLIC | Current value of PSC global timer register. |
| **RtimWF** | Time Tag Waveform | waveform | PUBLIC | Time tag from memory |
| **Scilk** | Security Interlock | bi | PUBLIC | Single-bit indicates that a SECURITY INTERLOCK fault exists. This monitors the SECURITY INTERLOCK status readback from the power supply.<br>0 => OK<br>1 => SECURITY INTERLOCK FAULT |
| **SER** | Switch Error | bi | PUBLIC | Single-bit indicates that the PSI binary status readback bits (ON OFF STANDBY) are not consistent. The only consistent combinations of these three bits are those with one and only on bait set (=1). All other combinations are inconsistent. This bit is calculated by the PSC device driver.<br>0 => OK<br>1 => INCONSISTENT |

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| **SptAvl** | Setpoint Available | bi | PUBLIC | {TBD} |
| **Stb** | Power Supply STAND | bi | PUBLIC | Single-bit status indicates that the power supply is in theSTANDBY state. This monitors the STANDBY bit from the power supply.<br>0 => NOT STANDBY<br>1 => STANDBY |
| **SvMemX** | Save Memory | bo | PUBLIC | Single-bit initiates a Save Memory operation when set. |
| **TIErr** | Current Tolerance Err | bi | PUBLIC | Single-bit indicates that the difference between the current setpoint value sent to the PSI and that read back from the PSI is greater than the Tolerance Setpoint (CTILim). This bit is calculated by the PSC device driver.<br>0 => OK<br>1 => OUTSIDE TOLERANCE |
| **TimAvX** | Averaging Sample Nu | longout | PUBLIC | Sets the number of time averaged samples. |
| **TimStm** | Buffer Time Stamp | longin | PUBLIC | Most recent buffer time stamp. |
| **TrgOvl** | Trigger Overlap | bi | PUBLIC | Single-bit indicates that an event trigger occurred before the PSI response to the previous one completed.<br>0 => OK<br>1 => TRIGGER ERROR |
| **TrModX** | Trigger Mode | bo | PUBLIC | Single-bit sets trigger mode for channel<br>0 => Hardware Trigger  1 => Software Trigger |
| **TrsTmo** | Transmission Timeout | bi | PUBLIC | Single-bit indicates transmission timeout error has occurred in the serial communication link between the PSC and the PSI.<br>0 => OK<br>1 => TIMEOUT ERROR |
| **V** | Voltage Readback | ai | PUBLIC | Most recent measured voltage readback value. |
| **VWF** | Voltage Readback Wa | waveform | PUBLIC | Measured voltage readback from memory. |